

However, the irregular, intra-population variation in white facial feathering, which occurs in the Sepia-brown Wren, is a unique phenomenon in the Troglodytidae, and clearly deserves attention.

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On the possible existence of the New Caledonian Wood Rail *Tricholimnas lafresnayanus*

by Tony Stokes

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The New Caledonian Wood Rail *Tricholimnas lafresnayanus* was described in 1860 and is now known only from 13 museum specimens (Fullagar, Disney & de Naurois in prep.). The most recent of these date from 1890 and all seem to have been secured by local villagers in the south of the island. The only record of its habits are observations made of captive birds in the early 1880's (Layard & Layard 1882).

It seems however that the species may still exist in very small numbers since unauthenticated accounts of captures by local villagers have continued to trickle to the ears of naturalists over the past 80 years (e.g. Warner 1947, de Naurois pers. comm.).

According to most authors, the rail is a close relative and congener of the Lord Howe Island Woodhen *T. sylvestris*, which is now reduced to a seemingly stable wild population of some 20 individuals atop a rugged peak on Lord Howe Island. Though uncertain, Disney (1974a) surmises that the feral populations of goats *Capra hirtus*, pigs *Sus scrofa*, rats *Rattus rattus* and cats *Felis domesticus* have contributed to the disappearance of *T. sylvestris* from the lowlands. The pig is the only one which does not at present share the surviving woodhen's habitat since it has apparently been unable to scale the peak.

In November 1975, I spent 2 weeks observing the Lord Howe Island Woodhen atop Mount Gower and discussing its biology with H. J. de S. Disney and Dr Peter Fullagar. I subsequently visited New Caledonia from 24 November–24 December 1976 to investigate recent reports of the existence of *lafresnayanus* and to conduct a search on the premise that the species' ecology would resemble that of *sylvestris*.

Though Olson (1973) believes that *sylvestris* and *lafresnayanus* should be separated generically, Ripley (1977) submerges them into *Rallus* with the comment that they are alike in many respects and may be considered part of a superspecies. Greenway (1967) also thought them very similar and Fullagar, Disney & de Naurois (in prep.) have retained both in *Tricholimnas*. Whatever

their taxonomy it is not unreasonable to assume they are ecological counterparts. Both are general olive-brown, flightless rails with narrow slightly down-curved bills, but *lafresnayanus* has a slightly longer bill and is a little larger than *sylvestris*, though their diet and foraging behaviour appear similar. Disney (1974b) states that *sylvestris* forage 'by scratching among the ground litter, and moving vegetation aside, with their bills; they do not use their feet'. They appear to feed on almost any invertebrate as well as the eggs and chicks of nesting Providence Petrels *Pterodroma solandri* (Fullagar & Disney 1975, Ripley 1977). Warner (1947) speculates that *lafresnayanus* eats snails, worms and foods similar to the Kagu *Rhynochetos jubatus*. In captivity the Layards (1882) fed it on 'Bulimi, raw meat, and garbage', items which seem little different from the scraps readily taken by *sylvestris* round Disney's (1974b) camp.

One wonders on what evidence the Layards found *lafresnayanus* to be nocturnal. Perhaps if their birds were only active at night it was an artefact of captivity. Though *sylvestris* is definitely diurnal, its peak activity times are the crepuscular hours (pers. obs.) and both Disney (1976) and myself had difficulty in locating a *sylvestris* roosting site in the dense vegetation. Disney (1976) also reports that the species moves about at night on some occasions.

T. lafresnayanus probably lives in similar forest types to *sylvestris*. By deduction, if litter invertebrates are a major dietary component in the food of *lafresnayanus*, as they appear to be for *sylvestris* (pers. obs., Disney 1974b, Fullagar & Disney 1975), then areas with a fast accumulation and breakdown of detritus would probably be favoured because they contain more food. Soil fauna, indeed, may be of such importance to *sylvestris* that its reduction, as a consequence of a reduction in leaf litter by feral animals, could account for the disappearance of the bird from all lowland areas in Lord Howe Island (Disney 1974b).

Though goats are absent from New Caledonia its population of feral animals is worse than Lord Howe Island and some species such as pigs, cats, rats and Samba Deer *Cervus timoriensis* are very common. There are also reports of feral dogs *Canis familiaris*, cattle *Bos taurus* and horses *Equus caballus*; however, these would exist only in small numbers and, as in the New Hebrides (Medway & Marshall 1975), it would be extremely difficult to establish the extent to which they are genuinely self-sustaining. In any case cattle and horses would have little effect on *lafresnayanus* in their present numbers. Of more concern is the fact that no part of the island is inaccessible to pigs (pers. obs., Rossart, Tonnelier, Begaud, pers. comm.). Overall there is little accurate knowledge of the distribution pattern and ecology of exotic animals and no research has been conducted or is envisaged (Rancurel, pers. comm.).

The Layards state that from native reports *lafresnayanus* 'appears to inhabit much the same localities as the "Kagou"'. In the same paper they say that the Kagu's habitat is precipitous ravines in the mountains. My melanesian guide pointed to such a ravine while we were camped on the remote headwaters of the Ouinne River and said he had heard the Kagu calling there in the early morning. Delacour (1966) says that the Kagu inhabits humid rain-forest and now, presumably, any remnant *lafresnayanus* would also be restricted to that habitat. Three recent reports support this view.

There have been 3 post-1945 reports of the existence of *lafresnayanus*.

1. *The Warner Report*

In 1947 Warner reported that:

'Several Frenchmen who had lived for more than sixty years in the vicinity of Mount Mou assured me that the rail is still present in the inaccessible glens of the mountain forests on the backside of Mount Mou and beyond it in the interior Mount Humboldt region. They called it the "Cocque de Bruyere" and described it accurately. A local resident informed Macmillan that he had captured one with the aid of a dog on Mount Panie only three weeks before. I received several such reports from various parts of the island including Bourail, La Foa, Canala and the priests and natives at the St. Louis Mission. Some were vague; but others gave such vivid descriptions of the bird and the capture that I was forced to believe a few birds were still alive.'

A local ornithologist (Th. Tonnelier, pers. comm.) comments that this report is very misleading because the reference to the vernacular name is misspelt and the people who used it may have been referring to the New Caledonian Grassbird *Megalurulus mariet*. The correct spelling is 'Coq de Bruyere' which translates as 'Cock of the heather'. This vocal and common bird is more likely to be seen in heather-type country than *lafresnayanus* but though the colouration is similar it is a much smaller bird and flies readily.

When I interviewed some old men of Col de la Piroque, at the foot of Mount Mou, and showed them a photograph of the coloured painting in Brenchley's (1873) book they said they knew of the wood rail but had not seen it on Mount Mou for more than 60 years and the dogs had probably exterminated it. If these are accurate reflections then the last sightings on Mount Mou would have been at the turn of the century. No thick forest now exists on or near the mountain as a suitable refuge for *lafresnayanus*.

2. *The Henwood Report*

In the north of the island the rail is known to Jack Henwood and his son, fishermen of Tao, a tiny village at the foot of Mount Panie. Mr Henwood was a collector for L. Macmillan, an assiduous biologist from the American Museum of Natural History, who lived in Tao for a month in 1936. Unfortunately his notes were not published though they have been referred to extensively by later authors (e.g. Warner 1947, Delacour 1966, Vuilleumier & Gochfeld 1976).

Mr Henwood (pers. comm.) has not heard of *lafresnayanus* in the region for many years. However his son told me that he had caught one on the southern ridge of the Ouieme River near its mouth about 15 years previously, that is 1961. The river drains the western slopes of Mount Panie-Mount Colnett and he marked the spot on a 1/50,000 map (Fig. 1). He recognised the bird from Sandford's drawing in Delacour (1966).

3. *The Rossart Report*

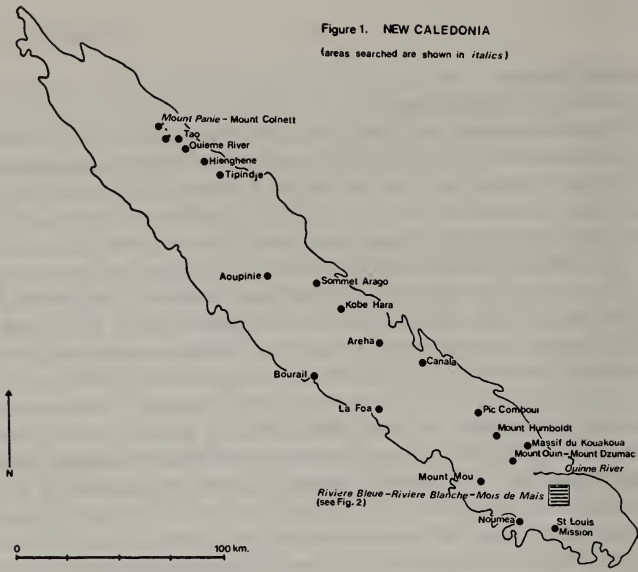
Professor R. de Naurois in 1971 (pers. comm.) located a Mr Rossart who made a 'very precise' report to him that: '*T. lafresnayanus* had been killed six years before, north of Mount Panie near the edge of the dense forest'.

Ripley (1977) also quotes de Naurois in giving the species status as 'very rare' and, incidentally, misquotes Delacour (1966) in listing an observation of the bird as 1956 instead of 1936.

On 26 November 1976 I spoke with Mr Rossart through an interpreter for 45 minutes and he marked a spot on a 1/200,000 map of the island where he

Figure 1. NEW CALEDONIA

(areas searched are shown in *italics*)



THE ROSSART REPORT

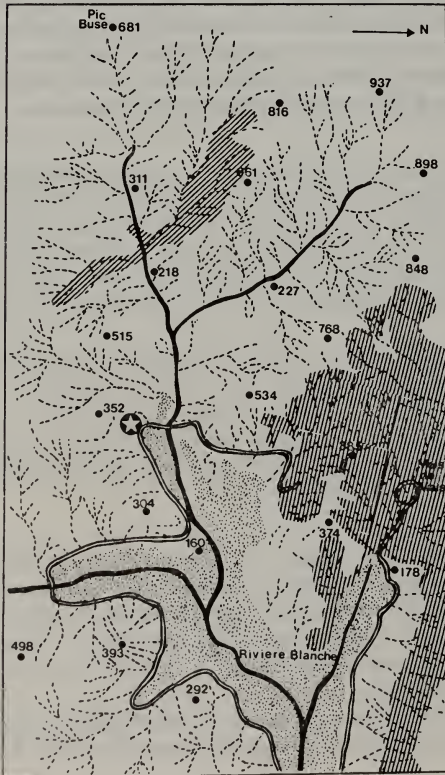


Figure 2.

Key

- ★ Mr. Rossart's mark
- ▨ Area covered in Dec. 1976 search
- Rivers
- - - Creek Channels
- ▧ Swampland
- ▩ Humid Forest boundary
- Altitude readings

Approximate scale :

said the natives who procured it had brought it to him. A surveyor by profession he has an extensive knowledge of the island's interior and his mark is on the southern ridge of the headwaters of the Riviere Blanche valley in the south of the island (Figs. 1 and 2). The reason for the wide discrepancy between this locality and that of de Naurois' account is not known.

According to Rossart the natives had caught the bird with a dog and brought it to him alive in June or July 1966. Since he had not seen one before he took some interest in it and later it was eaten by natives. He had recently been unable to find the natives concerned since they had moved from their village.

In a comparison of Sandford's drawing, in Delacour (1966), and Brenchley's (1873) painting he preferred the former saying that the bird was more reddish-brown on the breast not blue-grey, as in the painting, and the breast was also 'more hairy' than the painting. Certainly the Sandford drawing resembles the posture of *sylvestris* more than the painting does. Disney has examined all but two of the known specimens of *lafresnayanus* and comments (pers. comm.) that 'Mr Rossart is probably right on the description of the bird as I consider the photo of the coloured plate (Brenchley) is that of an adult bird and few adult birds have been collected. I think feathering in the young birds is more "loose" and "hair like"'.

My search for *lafresnayanus* was confined to areas of thick humid rainforest and rugged topography similar to where the relict *sylvestris* population survives. I also used information from the 3 most recent reports of *lafresnayanus* and mapped suitable habitat from an aerial reconnaissance of the island. Unfortunately only one area in the north and 2 in the south of the island were visited (Fig. 1). However other possibly suitable areas are listed in Table 1 and shown in Figure 1.

TABLE 1

Some areas possibly containing remnant *T. lafresnayanus* on New Caledonia.
(Areas 1-3 were visited in 1976)

1. Western slopes and ridges of Mount Panie-Mount Colnett and the Ouieme River.
2. Ouinne River headwaters.
3. Riviere Bleue, Riviere Blanche and Mois de Mai region.
4. Behind Tipindje in the Forêt de Neaba between Pouailatimbe (les Levres) and Mount Cantaloupa - perhaps the western faces of Pouailatimbe and Tonine.
5. The eastern face of Sommet Arago.
6. The western slopes of Kobe Hara falling into the Riviere de Nou.
7. The southwestern face of Areha falling into the Kouaoua tributary.
8. The slopes surrounding Aoupinie.
9. The wide area covering the slopes of Mount Humboldt, Pic Comboui and Massif du Kouakoue, especially precipitous areas.

Ground searches were made in the morning and evening hours at each locality. During searches an assortment of the shrill *sylvestris* calls were played at irregular intervals through a portable Sanyo cassette player, model M.2541, at maximum amplification. In the thick forest it is doubtful if these carried more than 25 m. In case they repelled rather than attracted *lafresnayanus*, occasional silent traverses were also made.

RESULTS OF EXPLORATION

No evidence of the wood rail was found during the searches and no unidentified calls, similar to *sylvestris*, were heard. Nevertheless the following notes from each of the 3 search areas may assist future visitors.

Mount Panie—Mount Colnett

The slopes of the 1961 Henwood sighting can be seen from the punt crossing the mouth of the Ouieme River. Though I was not able to search them they should be readily accessible to a thorough search for, though they range from very steep to precipitous, the humid forest occurs only in small stream valleys and does not cover a wide area.

The eastern slopes of Mount Panie are steep enough to make extensive coverage of them very difficult and tiring. More importantly much of the vegetation consists of very thick windswept scrub with stems growing so close together as probably to inhibit wood rail foraging. Certainly it is much thicker than that in which the Lord Howe Island bird now lives or, presumably, used to live. The humid forest on the mountains appear thicker and more extensive on the sheltered western slopes than the eastern slopes which abut the ocean. On the eastern side this forest has a lower canopy and grows only in sheltered pockets.

Our 4 day search revealed very fresh pig rootings over a wide area of the summit and extending into the valleys – even over the precipitous headwaters of the Oua Pandieme on the eastern slope. This area harboured a greater density of wild pigs than the other 2 visited. There were also many recent deer prints and rat and cat faeces on the summit. I received reports that the deer live only in the Niaouli *Melaleuca leucodendron* savannah forest but I also saw them in humid forest both on Mount Panie and near the Riviere Bleue in the south. This may have a wider implication for the survival of *lafresnayanus* if another report is correct: that wild dogs only follow the deer.

Ouinne River—Mount Ouin

The lower altitudes of this long river valley leading from Mount Ouin are clothed in humid forest only along the tributaries of the main river. These forests coalesce on the higher slopes. The lower ridges and slopes have a vegetation complex called 'le maquis des terrains miniers' (Le Borgne 1964) or 'the mining land bush'. It has an arid red lateritic soil prone to much water erosion due to sparse ground cover, low stunted bushes shrubs and ferns, and no herbs.

There were signs of pigs along the 3 tributary systems searched and my guide told me he had shot pigs there. Cat faeces were common and two rats were taken each night from 10 traps. There were no signs of deer although my guide had hunted them with success in the valley before. The shrill calls of the mountain graybird *Coracina analis* were at first thought to be *lafresnayanus* and it took a day of careful observation to prove that this was not so. It is unlikely that the wood rail could survive in the area.

Riviere Bleue, Riviere Blanche, Mois de Mai

The streams of these 3 adjoining localities all drain into Yate Lake in the southeast of the island. To the north, over a 1200 m range, is the Ouinne River.

The site of the Rossart report (Fig. 2) is in the middle of sparse 'mining land terrain' so the bird was probably captured elsewhere and brought to Rossart. Only 2 reasonably large areas of humid forest exist in the valley as likely wood rail habitat; both are on the northern slopes and the nearest is a 3–4 hour walk from Rossart's mark. The forest there is contiguous with the Mois de

Mai and only a very cursory one day search was feasible. The vegetation appeared sufficiently open and the litter deep enough to permit the bird to live, at least along the stream edges. Though there were abundant pig signs it still may warrant a thorough search, especially on the more precipitous ridges leading up the eastern face of the 768 m high mountain. The second area is further west than the first and could not be seen from Rossart's mark.

The riverine forest on the Mois de Mai and the Riviere Bleue, northeast of Rossart's mark, is very thick and difficult to penetrate. It may thin out at higher altitudes but it is doubtful that the rail would live on the lower slopes.

Though all sections of the area had abundant deer, pig, rat and cat signs few of the hunters who frequent the Coulee, Thi and Lembi river systems on weekends intrude into the reserves along the Rivières Blanche and Bleue.

DISCUSSION

New Caledonia is economically dependent on nickel mining and an exploitative mining policy has allowed 4-wheel drive access to most rugged areas. Besides creating erosion, the roads allow hunters into the interior and hunting is a passion on the island (pers. obs., Warner 1947). It is also probably more intense in the south where the most promising areas for the wood rail remain and where all extant specimens seem to have been taken (Disney, Fullagar, pers. comm.). Little notice is taken of the game laws and their enforcement is almost non-existent outside reserves.

If *lafresnayanus* is an ecological counterpart of *sylvestris*, then probably a reduction in the feral populations of pig and deer would benefit the New Caledonian bird. Since hunting dogs are responsible for the capture of the rare wood rail reported, another measure for their survival would be the widespread adoption of muzzles for the dogs.

As it is, both Warner (1947) and Ripley (1977) believe the bird is not extinct but 'very rare' and the post-1945 reports support this view. Though the uncompromising New Caledonian terrain may have been the species greatest ally in survival, under the present conditions it is almost certain that any remaining birds will disappear. Therefore a captive breeding programme should be attempted with any future live specimens.

In addition, any future search would benefit from a long publicity campaign to attract recent reports from villagers. This could quickly and effectively survey the island and has proved successful in finding rare species in the past (Chisholm 1922).

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Notes on the Yellow Tit *Parus holsti* of Taiwan with discovery of its nest

by W. F. Chang and S. R. Severinghaus

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The Yellow Tit *Parus holsti* is one of 14 species of birds endemic to the island of Taiwan (Severinghaus & Blackshaw 1976). It was discovered in 1894 by Seebohm's Swedish collector A. P. Holst (Seebohm 1895), and 57 years later Hachisuka & Udagawa (1951) wrote that its life history was still unknown. This paper presents information which has been gathered about the Yellow Tit since 1951, including the discovery of its nest.

Discovery of nests. The authors have observed Yellow Tits sporadically in the field since 1966, but it was not until 12 May 1976 that Chang found the first nest, and the next year 2 more on 15 April. As far as we know, these nests are the first ones reported.

The nests were found at 1250 m elevation in the hills of the Experimental Forest of National Taiwan University at Chitou, Nantou Co. (23° 30' N, 120° 30' E). The experimental forest covers 2488 hectares in the foothills of west central Taiwan. Two-thirds of this area has been cleared of its original hardwood vegetation and converted to plantations of conifers and bamboo. One-third of the area still remains as natural hardwood forest, and it was in these tracts of hardwoods that the three nests were found. Nests were not found in man-altered habitats.

The nests. One nest hole was 6 m above the ground in a 15 m high *Noto-phoebe konishi*, a large, uncommon hardwood, endemic to mountains in the central and southern parts of the island up to 2500 mm (Li 1963; Liu 1970). This same site was used in both the 1976 and 1977 breeding seasons, but we do not know whether it was occupied by the same pair. Dimensions of the nest cavity were as follows: hole diameter 11 cm, cavity depth 23 cm (from top of hole to bottom), cavity width 9 cm, depth of nest material 5 cm.